

EPA Five-Year Review Signature Cover

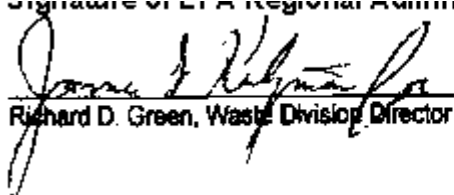
Site name: Lewisburg Dump		
EPA ID: TND980729115		
Region: 4	State: TN	City/County: Lewisburg/Marshall
Site Status		
NPL status: Site deleted from NPL on 2/1/96		
Remediation Status: Complete, Monitoring continued.		
Multiple OUs? No		
Construction complete date: 9/20/93		
Has site been put into reuse? No		
Review Status		
Lead Agency: US EPA		
Author: Femi Akindele		
Author title and affiliation: Project Manager, US EPA, Atlanta GA.		
Review period: 2/02-8/02		
Dates of site inspection: 4/2/02 and 8/27/02		
Type of review: Post SARA/Statutory		Review Number: 2
Triggering action and date: RA construction initiation 9/92		
Due date: 9/2002		

Deficiencies: None

Recommendations: See Section IX of report

Protectiveness statements: The remedy at the Lewisburg Dump Site continues to protect human health and the environment effectively. Concentrations of contaminants in the groundwater samples from the site are much lower now than the levels before the remedy. There are no issues or factors that are likely to compromise the integrity of the cap installed on the landfill or other aspects of the remedy. Therefore, the site is expected to remain stable and to maintain long-term protectiveness of the public and the environment.

Signature of EPA Regional Administrator or Division Director and Date:


 Richard D. Green, Waste Division Director

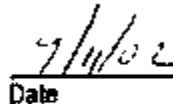

 Date

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List of Acronyms

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Contaminants of Concern
EPA	Environmental Protection Agency
LERC	Lewisburg Environmental Response Committee
NCP	National Contingency Plan
NPL	National Priorities List
PPB	Parts Per Billion
PRP	Potentially Responsible Party
RA	Remedial Action
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
TDEC	Tennessee Department of Environment and Conservation
TDPH	Tennessee Department of Public Health

Executive Summary

This second statutory Five-Year Review of the Lewisburg Dump Site has been conducted to assess the performance of the remedial action activities at the site, as required by CERCLA §121 and the NCP. The review is required every five years following the initiation of the remedial construction at the site because the remedy allows hazardous substances to remain on-site above levels that would allow an unrestricted use of the site.

Remedial Action was conducted at the site under EPA oversight by the PRPs between 1992 and 1993. The clean-up activities included removal of above ground waste and debris from the site, installation of an approved landfill cap, site grading and landscaping, chain link fencing, and institutional control. In addition, the remedy called for regular site inspection, landscape maintenance and groundwater monitoring which are conducted periodically to ensure that the site remains stable. The RA construction completion or close-out report was signed on September 20, 1993, and the site was deleted from the National Priorities List on February 1, 1996.

Performance of the remedial activities at the site was evaluated in September 1997, as the first five-year review of the RA. The review concluded that the RA was performing as desired. Since then, the site has been inspected regularly and maintained by the PRPs under State oversight. Reports of these activities and groundwater sampling have been evaluated in this second five-year review. Results of the evaluation indicate that the remedial activities at the site continue to be effective in protecting human health and the environment. Concentrations of site contaminants have reduced considerably relative to the levels before the remedial action was initiated.

In order to ensure that the remedy continues to be effective, it is recommended in this report that the current level of remedial activities be maintained, particularly the landscape, the fencing, the institutional control and regular inspection. Annual groundwater sampling needs to be conducted in order to provide adequate data for the next five-year review which is due by September 30, 2007.

FIVE-YEAR REVIEW SUMMARY FORM

Site Identification		
Site Name: Lewisburg Dump		
EPA ID: TND980729115		
Region: 4	State: TN	City/County: Lewisburg/Marshall
Site Status		
NPL status: Final		
Remediation Status: Complete		
Multiple OUs? No		
Construction complete date: 9/20/93		
Has site been put into reuse? No		
Review Status		
Lead Agency: US EPA		
Author: Femi Akindele		
Author title and affiliation: Project Manager, US EPA, Atlanta GA.		
Review period: 2/02-8/02		
Dates of site inspection: 4/2/02 and 8/27/02		
Type of review: Post SARA/Statutory	Review Number: 2	
Triggering action: RA construction initiation		
Triggering action date: 9//92		
Due date: 9/2002		

Five-Year Review Summary Form, contd.

Issues:

No issues were identified as a result of this review.

Recommendations and Follow-up Actions:

1. Continue to provide the current level of Operations and Maintenance at the site to ensure that the landfill cap is properly protected by vegetation and that the fence remains intact to control access.
2. Collect and analyze groundwater samples, at least, once a year and report the results to the State and EPA.
3. Repair the cracked concrete pad around sample well DRW-6 to protect the well.
4. Conduct the next five-year review by September 2007.

Protectiveness Statement:

Groundwater monitoring results evaluated in this review have indicated that the concentrations of the contaminants of concern at the site are considerably lower than the levels before the remedial action was taken. The landfill cap is well covered with vegetation and shows no signs of erosion. Site fencing is intact and the institutional control limiting the use of the property is in force. Therefore, the remedy performed at the site remains effective in protecting human health and the environment.

Long-Term Protectiveness:

As long as the cap is maintained properly with adequate vegetation and regular mowing, its integrity will continue to be protected. This will continue to keep rainwater from infiltrating the landfill and prevent the release of contaminants into the environment. In addition, by maintaining the institutional control on the site and keeping the fence in good repairs, unauthorized use of the site will continue to be prevented. Thus, the remedy will continue to provide the desired protection of human health and the environment indefinitely.

**SECOND FIVE-YEAR REVIEW REPORT
LEWISBURG DUMP SUPERFUND SITE
LEWISBURG, TENNESSEE**

I. Introduction

The purpose of this second five-year review is to determine whether the clean-up performed at the subject site continues to be protective of human health and the environment. This report documents the methods, findings, and conclusions of the review. In addition, issues identified during the review and recommendations for addressing the issues are included in the report

The Agency is preparing the five-year review report pursuant to CERCLA §121 and the NCP. CERCLA §121 states:

If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action at least, every five years after the initiation of such remedial action to ensure that human health and the environment remain protected by the remedial action implemented. In addition, if upon such review, it is the judgement of the President that action is appropriate at a site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of the reviews, and any actions taken as a result of the reviews.

The Agency interpreted this requirement further in the NCP; 40 CFR §300.430(f)(4)(ii) states:

If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less than every five years after the initiation of the selected remedial action.

EPA Region 4 conducted this second five-year review of the remedy implemented at the Lewisburg Dump Site. The remedy permitted hazardous substances, pollutants, or contaminants to remain at the site above levels that would allow for unlimited use and unrestricted exposure. The initiation of the remedial action at the site in September 1992, triggered the first statutory five-year review which was reported in September 1997, and this review which is the second statutory five-year review.

II. Chronology

The following table summarizes the major events at the Lewisburg Dump Site and their dates of occurrence.

Table 1: Chronology of Site Events

Event	Date
Initial site discovery	01/01/81
NPL listing	12/1982
Administrative order on consent for RI/FS	12/31/87
RI/FS completion	6&7/90
Proposed plan public meeting	7/25/90
ROD signature	9/19/90
RA consent decree	8/12/91
Remedial design report	6/30/92
Remedial action plan	7/6/92
RA start	9/4/92
Deed restriction entry	8/9/93
RA completion	9/20/93
Close-out report signed	9/28/93
Deletion	2/1/96
First five-year review	9/26/97

III. Background

The Lewisburg Dump Site is a twenty-acre tract of farmland located about one-half mile north of the City of Lewisburg, Tennessee, and it is approximately forty miles southeast of Nashville, Tennessee. It contains an abandoned six-acre limestone quarry and a pond. There are ten homes with approximately thirty residents in the vicinity of the site. The City of Lewisburg owned and operated the dump which utilized approximately four acres at the western portion of the quarry for landfill operations from the late 1950s to 1979. The landfill indiscriminately accepted residential and industrial wastes and was used by waste haulers from several surrounding communities.

In early 1970s, the City of Lewisburg conducted an evaluation of the facility and determined that the capacity of the landfill was nearly exhausted. Based on the evaluation, the City submitted a proposal for future use of the facility to the Tennessee Department of Public Health (TDPH), including an interim maintenance plan, a proposal for an on-site incinerator, and a schedule for the landfill closure. In 1973, TDPH conducted a study of the facility and concluded that the property was unfit for a sanitary landfill. The city began closing the facility in 1977, by covering the waste with dirt. The temporary landfill closure was completed in 1979.

EPA initially inspected and assessed the conditions of the site in 1982. Among the wastes observed during the inspection were adhesives, paint stripper, empty pails coated with yellow lacquer, metal cuttings, sawdust, pencil cores, cosmetic powders and shoe linings. Results of the assessment indicated the presence of organic and inorganic compounds including lead, toluene, polychlorinated biphenyl, chlordane, and phenol. After evaluating site inspection data and the conditions of the landfill, EPA added Lewisburg Dump to the NPL in December 1982,

In the fall of 1985, EPA conducted a search for all companies, agencies and individuals who were potentially responsible for the hazardous wastes at the site. In January 1986, EPA notified the PRPs of the environmental conditions at the dump and the need to conduct a Remedial Investigation and Feasibility Study of the site. In response, the City of Lewisburg and other potentially responsible parties (PRPs) formed the Lewisburg Environmental Response Committee (LERC) to conduct the RI/FS. The study was conducted under the terms of an Administrative Order on Consent which the PRPs entered into with EPA.

The RI/FS began in October of 1988, and was completed in 1990. The study confirmed that various hazardous substances were present at the site. Organic and inorganic compounds were detected in the landfill soil, shallow aquifers beneath the site, and in the abandoned quarry pond.

The most prevalent organic contaminants at the site were bis(2-ethylhexyl)phthalate, (DEHP), methylene chloride, xylene, ethylbenzene, 4-methyl-2-pentanone, 2-butanone, carbon disulfide, and toluene. The most common inorganic contaminants were copper, chromium, aluminum, arsenic, iron, lead, manganese, mercury, barium, and zinc. Of these contaminants, only DEHP and copper were detected at levels of significant concern. No contaminants were detected at appreciable concentrations beyond the boundary of the site.

Results of the RI/FS indicated that human health and the environment were potentially at risk due to the large variety of the chemicals found at the site. Other concerns raised by the studies were that the chemicals in the landfill could become exposed due to inadequate and deteriorating landfill cover, unrestricted access to the site and possible disturbance of landfill wastes. In addition, there was the potential for increased generation of leachate and groundwater contamination if appropriate measures were not taken to improve the prevailing site conditions.

Special studies, including well surveys and dye trace analyses, were conducted in and around the site to evaluate groundwater conditions since most residences had water wells. The well survey identified 123 households within a 2-mile radius of the site with a minimum of one well on each property. Approximately 70 of these households were utilizing groundwater from wells for domestic or livestock purposes. However, most residences near the site were connected to the municipal water supply. No industrial or municipal wells were found in the survey area. The dye trace studies did not indicate that the site was jeopardizing any domestic wells in the area.

In September 1990, EPA issued a Record of Decision (ROD) which described the remedy selected for the site. The major components of the selected remedy were:

1. removal and disposal of surface debris from the site including the dump and the quarry pond areas
2. landfill cap repair and regrading, re-seeding and maintenance
3. institutional controls
4. long-term monitoring.

IV. Remedial Action

In 1991, the PRPs signed a Consent Decree which required them to conduct the Remedial Action stipulated in the ROD. Remedial construction work began in September 1992, and was completed in September 1993, under EPA's oversight. The report of the Remedial Action, which was submitted by the PRPs shortly after the work was completed, indicated that 382 cubic yards of soil/debris, 172 tires, 50 empty drums and 2 drums containing lead paint and sludge were removed from the site. These were disposed of at properly permitted facilities. In August 1993, the City of Lewisburg recorded the land use restriction for the site with Marshall County as required by the Consent Decree. EPA and TDEC performed a final site work inspection in September 1993, and determined that the RA had been successfully executed. The Close Out Report for the site was issued, also in September 1993. The document described current site conditions, quality assurance and control procedures during the remedial construction, and the technical criteria for demonstrating construction completion.

Periodic site inspection, maintenance and groundwater monitoring activities which began immediately after the RA are being conducted by the PRPs. The state provides the oversight on these activities. The groundwater monitoring is facilitated by six sampling points located strategically with the aid of dye trace studies. The sampling points include a spring, three private wells, and two dedicated monitoring wells.

Section 300.425(e) of the National Contingency Plan (NCP) indicates that sites may be deleted from the National Priorities List (NPL) when no further Superfund response is warranted. Accordingly, the Lewisburg Dump Site was deleted from the NPL effective February 1, 1996, after EPA and the State determined that all appropriate response actions for the site had been completed by the PRPs.

V. Progress Since the Last Five-Year Review

EPA conducted the first Five-Year Review of the remedy at the site in September 1997. Reports of the periodic site inspections and maintenance records were evaluated during the review. In addition, data from laboratory reports for more than 50 groundwater samples taken over a period of four years from the monitoring wells were analyzed. Concentrations of the contaminants of concern at the site before and after the Remedial Action were then compared. The Five-Year Review concluded that the RA activities conducted at the site were performing as intended and that site conditions no longer posed a threat to human health or the environment.

Since 1997, site inspection and maintenance activities have continued to be conducted at the site with no reports of unfavorable conditions. In 2001, groundwater samples were collected from five monitoring points at the site and analyzed in the laboratory to determine current concentrations of site contaminants. Data from the laboratory reports were

evaluated as part of this Five-Year Review. The concentrations reported for the contaminants of concern are summarized in the following table.

TABLE 2--YEAR 2001 GROUND WATER SAMPLING RESULTS, PPB

COC	POACH WELL	DISTILLERY	HENDRICH	MWELL 6	MWELL 7
DEHP	<10	<10	<10	<10	<10
ALUMINUM	<10	260	<10	160	3200
BARIUM	22	21	21	39	70
COPPER	<10	<10	<10	<10	14
IRON	640	150	37	290	2000
MANGANESE	210	<10	<10	29	120

As the table indicates, DEHP was measured at below detection limit of 10 parts per billion in all five water samples. Maximum concentrations measured for aluminum, barium, copper, iron and manganese were 3200, 70, 14, 2000, and 210 parts per billion respectively. As shown in the table below, the current maximum COC concentrations are much lower than the highest values observed in previous water samples from the site, including those before and after the RA.

TABLE 3--COC CONCENTRATION TREND, PPB

COC	BEFORE RA (1993)	AFTER RA (1994-1997)	CURRENT (2001)
DEHP	12	176	<10
ALUMINUM	15,900	11,200	3,200
BARIUM	698	177	70
COPPER	120	164	14
IRON	25,800	5,840	2000
MANGANESE	745	673	210

VI. Five-Year Review Findings

This five-year review has been based primarily on the evaluation of site inspection reports and the results of sampling activities. Background information and baseline data were obtained from the Record of Decision for the site and previous five-year review report to evaluate current site conditions relative to the clean-up goals.

Based on the observations and remarks made under Section V of this report, the clean-up goal of preventing a threat to the groundwater was achieved. Concentrations of all contaminants of concern found in the groundwater have decreased considerably since the last five-year review was conducted. This indicates that wastes in the landfill remain contained adequately by the remedy.

On April 2, 2002, EPA project manager requested the Tennessee State site manager to conduct a special site inspection as part of this five-year review. Both officials inspected the site again on August 27, 2002. At the time of the inspections, no detrimental conditions were observed at the site. The concrete pad for monitoring well DRW-6 was cracked and should be patched, but this is of no significant concern. The topography of the cap appeared to remain favorable for proper drainage of rain water. The vegetation covering the landfill, including grass and weed, was well maintained and adequately protects the cap from erosion. Water level in the quarry was high but no sign of sheens or discoloration was noticed. Wood ducks and mergusens were observed around the site indicating that wildlife had returned to the area. Based on these observations, it is believed that the site remains stable and that the goal of eliminating exposure to contaminants in the landfill was achieved by the remedial activities conducted at the site.

The on-going site activities include occasional grass mowing and groundwater monitoring. These are conducted by the PRPs at a cost of approximately \$6,300 per year.

VII. Technical Assessment

Question A: Is the remedy functioning as intended by the decision documents?

As discussed above, pertinent documents were reviewed, laboratory data were analyzed and site inspections were conducted as part of this five-year review. From all indications, the remedial activities conducted at the site are functioning as intended in the record of decision.

Removal of surface waste eliminated the potential for direct contact with hazardous materials. Landfill cap repair, regrading, vegetation, and maintenance are effectively preventing leachate problem and further contamination of the groundwater. Groundwater sampling points are well positioned to provide representative monitoring data which are necessary for proper site performance assessment.

Question B: Are the exposure assumptions, toxicity data, clean-up levels, and remedial action objectives used at the time of the remedy selection still valid?

The clean-up criteria established in the ROD for the site are consistent with the current Federal and Tennessee drinking water standards. For compounds with no federal or state standards, health based groundwater criteria were established according to EPA guidelines. There have been no changes in the physical conditions at the site that would decrease the effectiveness of the remedy.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

There is no information that could cause the protectiveness of the remedy to be questioned. Concentrations of the contaminants of concern in the groundwater have actually dropped considerably since the last five-year review was conducted. This condition indicates that the remedy continues to be protective of human health and the environment.

Technical Assessment Summary

Based on available information, the remedy at the Lewisburg Dump Site is performing as intended. There are no technical issues or inadequacies in the current operations and maintenance that would compromise the integrity of the landfill cap or adversely impact the performance of the remedy.

VIII. Issues

There are no issues relative to this site as a result of this five-year review.

IX. Recommendations and Follow-up Actions

The current level of site maintenance and monitoring should continue to be provided in order to ensure that the remedy continues to perform effectively. The State should continue to provide PRP oversight and reporting to EPA. As required by CERCLA, EPA must conduct five-year reviews on this site indefinitely because hazardous substances remain in the landfill at levels that restrict the use of the property.

X. Protectiveness Statement

The RA implemented at this site was aimed primarily at stabilizing the landfill by containing the waste in the facility. The RA construction was performed as designed and as approved by EPA with State concurrence. Site inspection and maintenance reports indicate that the remedy is functional and effective. Groundwater monitoring results show contaminant concentrations are decreasing. The perimeter fence is intact and prevents unauthorized access to the site effectively. There are no violations of the institutional control placed on the property. Therefore, it is the conclusion of this review that the remedy selected for the site remains protective of public health and the environment.

XI. Next Review

The next five-year review for the site is due by September 30, 2007.